Sanitary Sewer Management Plan
Signature Page

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1 Introduction

1.1 Purpose

Any prohibited sanitary sewer overflow (SSO) originating from a publicly owned sanitary sewer collection system constitutes a violation of the California Water Code and is subject to enforcement action. Since May 2006, the State Water Resources Control Board (SWRCB) has required all federal and state agencies, municipalities, counties, districts, and other public entities that own or operate sanitary sewer systems greater than one mile in length that collect and/or convey untreated or partially treated wastewater to a publicly owned treatment facility in the State of California to comply with the monitoring and reporting terms of Statewide General Waste Discharge Requirements (WDR) Order No. 2006-0003-DWQ. Order No. 2006-0003-DWQ was subsequently amended in February 2008 by Water Quality (WQ) Order No. 2008-0002-EXEC, and again in July 2013 by WQ Order No. 2013-0058-EXEC.

The purpose of this Sanitary Sewer Management Plan (SSMP) is to ensure that SLAC National Accelerator Laboratory (SLAC) has a plan in place to reduce or eliminate SSOs, as well as mitigate any SSOs that occur. The SSMP accomplishes this purpose by defining specific procedures and programs in 11 categories defined by the SWRCB WDRs. The layout of the SSMP follows the requirements of Order No. 2006-0003-DWQ D.13, and addresses the following elements: goals; organization; legal authority; operation and maintenance program; design and performance provisions; overflow emergency response plan; fats, oils, and grease (FOG) control program; system evaluation and capacity assurance plan; monitoring, measurement, and program modifications; SSMP program audits; and communication program.

1.2 Regulatory Background

1.2.1 Requirement of SSMP and SSO Reporting

Since May 2006, the SWRCB has required all public wastewater collection system agencies in California with greater than one mile of sewers to be regulated under General WDR Order No. 2006-0003-DWQ. SLAC’s sanitary sewer system consists of greater than one mile of sanitary sewer lines that are owned by the Department of Energy (DOE), a public agency, and maintained by SLAC staff under contract with Stanford University.

Order No. 2013-0058-EXEC amended the Monitoring and Reporting Program (MRP) of Order No. 2006-0003-DWQ. The amended MRP established new monitoring, record-keeping, reporting and public notification requirements, effective September 9, 2013. The SWRCB Order requires the implementation of a system-specific SSMP and compliance with SSO electronic reporting requirements to the California Integrated Water Quality System (CIWQS) Online SSO Database.

Order No. 2013-0058-EXEC created the following categories of SSOs:
• **Category 1:** Discharge of untreated or partially treated wastewater of any volume resulting from an SSO that reaches surface water and/or reaches a drainage channel tributary to surface water.

• **Category 2:** Discharge of untreated or partially treated wastewater of **1,000 gallons or greater** resulting from an SSO that does not reach surface water or a drainage channel tributary to surface water.

• **Category 3:** All other discharges of untreated or partially treated wastewater resulting from an SSO (e.g., discharge of untreated or partially treated wastewater of less than **1,000 gallons** resulting from an SSO that does not reach surface water or a drainage channel tributary to surface water).

• **Private Lateral Sewage Discharge (PLSD):** Discharge of untreated or partially treated wastewater resulting from blockages or other problems **within a privately owned sewer lateral** connected to the enrollee’s sanitary sewer system or from other private sewer assets.

Section 4.3 of this SSMP addresses SSO overflow reporting.

1.2.2 Requirement for Biennial Internal Audit

Prior to the release of Order No. 2013-0058-EXEC, the San Francisco Bay Regional Water Quality Control Board (RWQCB) issued a letter on October 3, 2012, informing agencies and entities that own or operate sanitary sewer systems in the San Francisco Bay Region and are enrolled\(^1\) in Order No. 2006-0003-DWQ, of the discontinuation of requirements for annual SSO reports and annual SSMP audit reports. The discontinuation of requirements also rescinded the RWQCB’s Water Code Section 13267 Orders issued on November 15, 2004, and July 7, 2005. Enrollees are still required to comply with Provision D.13(x) of Order No. 2006-0003-DWQ. Provision D.13(x) requires enrollees, regardless of the population served, to conduct an internal SSMP audit, at a minimum of every two years, and prepare an audit report to be kept on file. Section 12 of this SSMP addresses SLAC’s internal SSMP audit.

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\(^1\) Per WDR Order No. 2006-0003-DWQ, an enrollee is defined as a federal or state agency, municipality, county, district, and other public entity that owns or operates a sanitary sewer system, as defined in the general WDRs, and that has submitted a complete and approved application for coverage under this Order.
2 System Overview

SLAC’s on-site sanitary sewer system consists of approximately 9 miles of gravity sewer lines and laterals, and thirteen sanitary sewer lift stations that are owned by the DOE and maintained by SLAC staff under contract with Stanford University. The SLAC sanitary sewer system is connected to the West Bay Sanitary District (WBSD) system lines which transport the wastewater to the Silicon Valley Clean Water (SVCW) wastewater treatment plant. By the end of 2019, the majority of SLAC’s wastewater will be transported to the WBSD recycled water plant at the Sharon Heights Country Club.

The majority of wastewater discharged from the SLAC sanitary sewer system enters the WBSD system at Sand Hill Road. The remainder of SLAC’s wastewater is discharged at five locations to a WBSD line which flows towards Alpine Road. Flow monitoring data are collected from all of these discharge locations. The average wastewater flow from SLAC is currently less than 42,000 gallons per day. SLAC’s wastewater entitlement from WBSD is 64,918 gallons per day. In accordance with SLAC’s industrial discharge permit issued by SVCW and WBSD, samples for chemical analysis are collected from the Sand Hill Road discharge, the Metal Finishing Pretreatment Facility, and the Former Hazardous Waste Storage Area groundwater treatment system. In addition to the chemical analyses collected at the aforementioned locations, WBSD will require SLAC to collect total dissolved solids and electrical conductivity samples from waste streams specified in the permit, once WBSD’s recycled water plant begins operations.
3 Goals

SWRCB Requirement (Order 2006-0003-DWQ D.13.i):

The collection system agency must develop a plan and schedule to properly manage, operate, and maintain all parts of its sanitary sewer system in order to reduce and prevent SSOs, as well as to mitigate any SSOs that occur.

The SSMP accomplishes the following three goals:

- Identify, prioritize, and continuously maintain, renew, and replace sewer system facilities to maintain reliable service now and in the future.

- Properly manage and operate SLAC facilities to minimize the number and impact of SSOs.

- Immediate and effective response to SSOs including mitigation, cleanup and reporting.

These goals, along with SLAC’s plan and schedule to manage, operate, and maintain the sanitary sewer system, is discussed in more detail in the following sections of the SSMP.
4 Organization

**SWRCB Requirement (Order 2006-0003-DWQ D.13.ii):**

The collection system agency’s SSMP must identify:

(a) The name of the Legally Responsible Official (LRO) or authorized representative (appointed in writing by the LRO);

(b) The names and telephone numbers for management, administrative, and maintenance positions responsible for implementing specific measures in the SSMP program. Include lines of authority as shown in an organization chart or similar document with a narrative explanation; and

(c) The chain of communication for reporting SSOs, from receipt of a complaint or other information, including the person responsible for reporting SSOs to the California Office of Emergency Services (Cal OES).

4.1 Legally Responsible Official or Authorized Representatives

The DOE is the owner of the SLAC sanitary sewer system and the DOE SLAC Site Office Manager is the LRO\(^2\). The DOE SLAC Site Office Manager has designated the DOE SLAC Site Office Environmental Program Manager as a duly authorized representative\(^3\). The SLAC Facilities Engineer from Facilities and Operations (F&O) Division is also a duly authorized representative for reporting and certification. The names and contact information of these individuals is included in Table 1.

4.2 Roles and Responsibilities by Position

Roles and responsibilities regarding the SLAC sanitary sewer system are as follows:

**DOE**

**DOE SLAC Site Office Manager:** The DOE is the owner of the SLAC Sanitary Sewer System and the Site Office Manager is the LRO. The Site Office Manager has Duly Authorized Representatives to certify SSO reports and manage the SSMP.

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\(^2\) Section J of Order No. 2006-0003-DWQ defines the LRO as person designated, for a municipality, state, federal or other public agency, as either a principal executive officer or ranking elected official.

\(^3\) Section J of Order No. 2006-0003-DWQ defines an individual as a duly authorized representative only if the authorization is made in writing by the LRO, and the authorization specifies either an individual or a position having responsibility for the overall operation of the regulated facility or activity.
DOE SLAC Site Office Environmental Program Manager: Oversees Environmental Safety and Health (ES&H) aspects of SLAC programs for the DOE and is a Duly Authorized Representative for the SLAC Site Office Manager.

**SLAC**

Management, operation and maintenance of the sanitary sewer is performed by the SLAC F&O Division. The management and environmental compliance regulations for discharges to the sanitary sewer, and overflows and associated environmental reporting and permitting, is facilitated by the Environmental Protection Department of the ES&H Division in conjunction with the F&O Division:

**Facility & Operations Division**

F&O Director: The F&O Director is responsible for system operation, repairs, improvements, and modifications. In addition, the F&O Director manages the operating budget, secures funding for improvement/repair/survey projects, and maintains records of the underground sanitary sewer infrastructure.

Mechanical and Civil Steward for Conventional and Civil Infrastructure: Reporting to the F&O Director, the Mechanical and Civil Steward for Conventional and Civil Infrastructure operates a comprehensive maintenance program to ensure a sufficient, dependable waste system that minimizes SSOs and meets the requirements of the DOE. The Mechanical and Civil Steward for Conventional and Civil Infrastructure is also a Duly Authorized Representative for SSO reporting and certification of required plans and reporting in CIWQS.

F&O Facilities Engineer: The F&O Facilities Engineer is also a Duly Authorized Representative for SSO reporting and certification of required plans and reporting in CIWQS.

Mechanical Supervisor: The Mechanical Supervisor organizes multiple maintenance efforts: including inspections, manhole repairs/coatings, closed-circuit television (CCTV) recording, and periodic high-pressure water jetting. The Mechanical Supervisor maintains records of system inspections, maintenance, and cleaning activities.

**ES&H Division**

Environmental Compliance Group Leader: Reporting to SLAC’s Environmental Protection Department Head, plans, directs and manages the environmental compliance programs at SLAC. Oversees development and implementation of wastewater compliance programs.

Wastewater Program Manager: Reporting to the Environmental Compliance Group Leader, designs and coordinates the wastewater discharge compliance program for SLAC. Assists F&O in interpreting and applying wastewater discharge requirements at SLAC, and maintaining the SSMP. Provides backup support for SSO reporting.

Spills Program Manager: Reporting to SLAC’s Environmental Protection Department Head, investigates spills and performs SSO reporting. Analyzes spills and spill response and works with F&O to improve performance of the sanitary sewer system. Performs an annual spill review to evaluate the effectiveness of the SSMP.
### Table 1: Names and Contract Information for Key Personnel

<table>
<thead>
<tr>
<th>Title</th>
<th>Name</th>
<th>Role in CIWQS</th>
<th>Office Phone Number</th>
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<tbody>
<tr>
<td><strong>DOE</strong></td>
<td></td>
<td></td>
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<tr>
<td>SLAC Site Office Manager</td>
<td>Paul Golan</td>
<td>Onsite Manager (LRO(^4))</td>
<td></td>
</tr>
<tr>
<td>SLAC Site Office Environmental Program Manager</td>
<td>Marie Heard(^5)</td>
<td>Onsite Manager (LRO designee)</td>
<td>(650) 926-5704</td>
</tr>
<tr>
<td><strong>SLAC F&amp;O Division</strong></td>
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<td></td>
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<tr>
<td>F&amp;O Director</td>
<td>Machelle Vieux</td>
<td></td>
<td>(650) 926-2559</td>
</tr>
<tr>
<td>Facilities Engineer</td>
<td>Dennis Radau</td>
<td>Onsite Manager (LRO designee)</td>
<td>(650) 926-3736</td>
</tr>
<tr>
<td>Mechanical &amp; Civil Steward for Conventional &amp; Civil Infrastructure</td>
<td>Steven Chow</td>
<td>Onsite Manager (LRO designee)</td>
<td>(650) 926-3063</td>
</tr>
<tr>
<td>Mechanical Supervisor</td>
<td>William Harrison</td>
<td></td>
<td>(650) 926-4308</td>
</tr>
<tr>
<td><strong>SLAC ES&amp;H Division</strong></td>
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<tr>
<td>Environmental Compliance Lead</td>
<td>Micki De Camara</td>
<td></td>
<td>(650) 926-2348</td>
</tr>
<tr>
<td>Wastewater Program Manager</td>
<td>April Giangerelli</td>
<td>Data Submitter</td>
<td>(650) 926-8601</td>
</tr>
<tr>
<td>Spills Program Manager</td>
<td>Mike Hug</td>
<td>Data Submitter</td>
<td>(650) 926-4042</td>
</tr>
</tbody>
</table>

### 4.3 Chain of Communication for SSO Reporting

Immediate spill response and cleanup are necessary for the protection of site personnel and the environment. All releases are reported to SLAC Security by calling x5555 and/or 911. Security notifies the Facility Manager Deputy (FMD), appropriate F&O personnel, the Waste Management Group for spill response, as well as the Spills Program Manager. These personnel will respond to the scene of the reported release, assess the condition and determine if it is a SSO. The FMD will notify the DOE SLAC Site Office Manager and appropriate SLAC management, as necessary.

Order No. 2013-0058-EXEC amended Order No. 2006-0003-DWQ in how notifications of SSOs are made. Per the requirements of Order No. 2013-0058-EXEC, the California Office of Emergency Services (Cal OES) must be notified within two hours of becoming aware of any

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\(^4\) Currently listed with a relationship end date in CIWQS that corresponds with the timing of the LRO registration of the SLAC Site Office Environmental Program Manager, a designee of the DOE SLAC Site Office Manager.

\(^5\) Replacement for Dave Osugi, the former SLAC Site Office Environmental Program Manager.
Category 1 SSO **greater than or equal to 1,000 gallons of discharge to surface water or spilled in a location where it probably will be discharged to surface water.** Notifications to Cal OES are not required for Category 2 or 3 SSOs. However, each category of SSO has specific reporting requirements, as detailed in Appendix A of this SSMP. In addition, water quality sampling is required within 48 hours after initial SSO notification for Category 1 SSOs in which 50,000 gallons or greater are spilled to surface waters.

The initial notification of SSOs is made by the ES&H Spills Program Manager or another designated employee from the ES&H Division to the Cal OES within two hours of becoming aware of any Category 1 SSO greater than or equal to 1,000 gallons of discharge to surface water or spilled in a location where it probably will be discharged to surface water. Notifications to Cal OES are not required for Category 1 SSOs less than 1,000 gallons, or Category 2 and 3 SSOs. The spills program manager will also prepare the applicable SSO reports via the CIWQS Online SSO Database. Each category of SSO has specific reporting requirements, as detailed in Appendix A of this SSMP.

Spill information requested by Cal OES may include:

- Name and direct return phone number of person reporting the unauthorized discharge.
- Estimated quantity and duration of the unauthorized discharge.
- If ongoing, estimated SSO discharge rate (gallons per minute).
- SSO Incident Description:
  - Brief narrative.
  - On-scene point of contact for additional information.
  - Date and time enrollee became aware of the SSO.
  - Name of sanitary sewer system agency causing the SSO.
  - SSO cause (if known).
  - SSO incident locations (address, city, state and zip code).
- Indication of whether the SSO has been contained.
- Indication of whether surface water is impacted.
- Location of threatened or involved waterway(s) or storm drains.
- Indication of whether a drinking water supply is or may be impacted by the SSO.
- Any other known SSO impacts.

Communication reporting requirements are summarized in Appendix A.
5 Legal Authority

SWRCB Requirement (Order 2006-0003-DWQ D.13.iii):

Each Enrollee must demonstrate, through sanitary sewer system use ordinances, service agreements, or other legally binding procedures, that it possesses the necessary legal authority to:

(a) Prevent illicit discharges into its sanitary sewer system (examples may include infiltration, inflow, storm water, chemical dumping, unauthorized debris and cut roots, etc.);

(b) Require that sewers and connections be properly designed and constructed;

(c) Ensure access for maintenance, inspection, or repairs for portions of the lateral owned or maintained by the Public Agency;

(d) Limit the discharge of fats, oils, and grease and other debris that may cause blockages; and

(e) Enforce any violation of its sewer ordinances.

The DOE owns all facilities at SLAC including the sanitary sewer system. The DOE contracts with Stanford University to operate all facilities in compliance with applicable rules and regulations. All property, facilities, and equipment located at SLAC are managed and operated under the authority of SLAC staff, who are able to maintain full control over discharges to the SLAC sanitary sewer collection system at all times. Additional information regarding SLAC’s responsibilities associated with the sanitary sewer system are detailed in ES&H Chapter 43 – Industrial Wastewater.6

6 http://www-group.slac.stanford.edu/esh/eshmanual/pdfs/ESHch43.pdf
6 Operation and Maintenance Program


(a) Maintain an up-to-date map of the sanitary sewer system, showing all gravity line segments and manholes, pumping facilities, pressure pipes and valves, and applicable storm water conveyance facilities;

(b) Describe routine preventive operation and maintenance activities by staff and contractors, including a system for scheduling regular maintenance and cleaning of the sanitary sewer system with more frequent cleaning and maintenance targeted at known problem areas. The Preventative Maintenance (PM) program should have a system to document scheduled and conducted activities, such as work orders;

(c) Develop a rehabilitation and replacement plan to identify and prioritize system deficiencies and implement short-term and long-term rehabilitation actions to address each deficiency. The program should include regular visual and TV inspections of manholes and sewer pipes, and a system for ranking the condition of sewer pipes and scheduling rehabilitation. Rehabilitation and replacement should focus on sewer pipes that are at risk of collapse or prone to more frequent blockages due to pipe defects. Finally, the rehabilitation and replacement plan should include a capital improvement plan that addresses proper management and protection of the infrastructure assets. The plan shall include a time schedule for implementing the short- and long-term plans plus a schedule for developing the funds needed for the capital improvement plan;

(d) Provide training on a regular basis for staff in sanitary sewer system operations and maintenance, and require contractors to be appropriately trained; and

(c) Provide equipment and replacement part inventories, including identification of critical replacement parts.

6.1 Sanitary Sewer System Map

SLAC Operations and Maintenance Group works with the Infrastructure Engineering Division to maintain a facility map, at a scale of 1” = 100’, which includes a layer for the sanitary sewer system. The mapping system shows most gravity line segments, manholes, pumping facilities and pressure pipes. Sewer pipeline size and material are included on this map. The facility map also contains a layer with many storm water conveyance components including pipe size and material, catch basins, and pumping facilities. The facility map was last updated on January 6, 2017. In addition, F&O maintains a Geographic Information System (GIS) database that shows all of the features on the facility map. The Infrastructure Engineering Division maintains an extensive library of drawings of the existing sanitary sewer system, some nearly 50 years old. These drawings include manhole types, locations and rim elevations, as well as pipe types and diameter. The drawings are maintained electronically in SEDA (SLAC Engineering Document Archive), available at https://slac.sharepoint.com/sites/SEDASearch.
The Infrastructure Engineering Division updates the sanitary sewer map and drawings on a regular basis. Sanitary sewer updates, for new construction projects, are added to the sewer mapping system after the projects are complete. When SLAC field technicians and F&O engineering staff identify errors on the existing maps and drawings, they provide a sketch or drawing with corrections to Infrastructure Engineering Division.

6.2 Routine Preventative Operation and Maintenance Activities

The F&O Division is responsible for the operation and maintenance of the sanitary sewer system. This includes all gravity and forced main piping, sewer lift stations and forced main valves. To assure continuous operation, a preventative maintenance (PM) program is utilized. This includes regular inspection and maintenance of critical sewer system components.

Key elements of the F&O Division PM program include the following:

- Scheduling of Work
- Lift Station Preventative Maintenance
- Gravity Sewer Cleaning
- Root Control
- Fats, Oils and Grease (FOG) Control Equipment Maintenance

**Scheduling of Work**

The F&O Division utilizes a computerized maintenance management system, Nuvolo Enterprise Assessment Management platform (Nuvolo), to schedule and track all routine PM as well as infrequently occurring maintenance tasks. PM task forms are printed daily and given to maintenance crew leaders. PM task forms are filled out as tasks are completed. The completed forms are then reviewed and closed by a supervisor.

**Lift Station Preventative Maintenance**

The Mechanical Group of the F&O Division performs PM on mechanical equipment at sanitary sewer lift stations including wastewater pumps, force mains and back-up generators. The group has a staff of mechanics and pipe fitters that can perform PM work on a majority of the sanitary sewer equipment. The Mechanical Group performs daily visual inspections of sanitary sewer lift stations. The Distributed Control System (DCS) is used to monitor the lift stations, and will send out an alarm to alert the Mechanical Group of any potential malfunction of the lift stations. PM intervals are based upon manufacturer recommendations. These intervals are adjusted based upon site conditions, visual observations and individual equipment needs.

The Mechanical Group maintains lift station system maintenance and repair manuals for each of SLAC’s lift stations. Each manual contains graphic representation of the lift station components, detailing the location of piping, valves and pumps. The manual also contains steps for routine maintenance and troubleshooting.
**Gravity Sewer Cleaning**

The Mechanical Group has determined that several gravity sewer line segments require periodic cleaning to maintain hydraulic capacity. An outside contractor provides quarterly cleaning of these select gravity sewer lines. Additional sewer lines are cleaned as needed. Individual line “jet” washing is done systematically to ensure that all debris is removed. The Mechanical Group also performs monthly cleaning of the flow flumes, and quarterly cleaning of sewer lines identified as needing more frequent cleaning.

**Root Control**

The Mechanical Group maintenance contractor also provides regular root control. As part of the quarterly cleaning, root problems are identified and steps are taken to remove them.

**FOG Control Equipment**

SLAC maintains FOG control equipment at the SLAC Café and at the transportation steam cleaner. The grease interceptor at the Café and oil/water separator at transportation are cleaned and maintained on a quarterly basis to ensure performance.

6.3 Rehabilitation and Replacement Plan

Video inspections of the sanitary sewer system were completed in July 2010. F&O Division staff reviewed the results of this assessment to identify and prioritize repairs and replacement of sewer line segments. Another assessment was performed in August 2014 to evaluate the top 10 trouble spots identified in the 2010 assessment. SLAC will continue to use the information gathered during these inspections in conjunction with information compiled from SSO reports and the PM program to assess the condition of the sanitary sewer system. Sewer line segments in need of repair, rehabilitation, or replacement are addressed as needed on a project by project basis.

6.4 Training

ES&H training is provided to all employees to comply with SLAC policy and federal, state, local, and DOE standards, and is documented in the SLAC Training Assessment (STA) database. The F&O Division is reviewing and updating its in-house training program which utilizes a combination of classes, on the job training, conferences, and seminars to train its sanitary sewer staff. Appropriate training is also required of all sub-contractors working at SLAC.

6.5 Equipment

The F&O Division conducts operation, maintenance, and SSO response activities for the sanitary sewer collection system and holds blanket contracts with sewer maintenance sub-contractors for regular preventative maintenance activities, inspections, and emergency response to sanitary sewer overflows. These sub-contractors provide their own inventory of maintenance equipment. SLAC maintains a limited inventory of critical components for the sanitary sewer lift stations because these systems are typically designed with redundant capabilities and additional replacement parts are readily available from local suppliers. SLAC purchased a camera for line inspections, and level controllers and alarms were added to the system to better detect pump failure or a level condition.
7 Design and Performance Provisions

SWRCB Requirement (Order 2006-0003-DWQ D.13.v):

The SSMP must identify:

(a) Design and construction standards and specifications for the installation of new sanitary sewer systems, pump stations and other appurtenances; and for the rehabilitation and repair of existing sanitary sewer systems; and

(b) Procedures and standards for inspecting and testing the installation of new sewers, pumps, and other appurtenances and for rehabilitation and repair projects.

SLAC follows standard industry practice for the design, construction, installation, rehabilitation, repair, inspection and testing of sanitary sewer systems, pump stations and other appurtenances. These guidelines are found in the California plumbing, electrical, and mechanical code; National Fire Protection Association standards; applicable federal regulations; and DOE directives. Where SLAC sanitary sewer systems connect with WBSD lines, SLAC follows the standards and guidance provided by WBSD.
8 Overflow Emergency Response Plan


Each Enrollee shall develop and implement an overflow emergency response plan that identifies measures to protect public health and the environment. At a minimum, this plan must include the following:

(a) Proper notification procedures so that the primary responders and regulatory agencies are informed of all SSOs in a timely manner;

(b) A program to ensure an appropriate response to all overflows;

(c) Procedures to ensure prompt notification to Cal OES of all Category 1 SSOs greater than or equal to 1,000 gallons discharged to surface water or spilled in a location where it probably will be discharged to surface water, in accordance with this MRP. All SSOs shall be reported in accordance with this MRP, the California Water Code, other State Law, and other applicable Regional Water Board WDRs or NPDES permit requirements. The SSMP should identify the officials who will receive immediate notification;

(d) Procedures to ensure that appropriate staff and contractor personnel are aware of and follow the Emergency Response Plan and are appropriately trained;

(e) Procedures to address emergency operations, such as traffic and crowd control and other necessary response activities; and

(f) A program to ensure that all reasonable steps are taken to contain and prevent the discharge of untreated and partially treated wastewater to waters of the United States and to minimize or correct any adverse impact on the environment resulting from the SSOs, including such accelerated or additional monitoring as may be necessary to determine the nature and impact of the discharge.

SLAC spill response procedures are found in the SLAC ES&H Manual Chapter 16 Spills (available at http://www-group.slac.stanford.edu/esh/environment/spills/policies.htm). The Chapter also includes spill prevention, notification procedures for primary responders and SLAC management, training requirements, and emergency procedures. Regulatory agencies are notified in accordance with Chapter 16 of the ES&H Manual.
9 Fats, Oils and Grease Program


Each Enrollee shall evaluate its service area to determine whether a fats, oils, and grease (FOG) control program is needed. If an Enrollee determines that a FOG program is not needed, the Enrollee must provide justification for why it is not needed. If FOG is found to be a problem, the Enrollee must prepare and implement a FOG source control program to reduce the amount of these substances discharged to the sanitary sewer system. This plan shall include the following as appropriate:

(a) An implementation plan and schedule for a public education outreach program that promotes proper disposal of FOG;

(b) A plan and schedule for the disposal of FOG generated within the sanitary sewer system service area. This may include a list of acceptable disposal facilities and/or additional facilities needed to adequately dispose of FOG generated within a sanitary sewer system service area;

(c) The legal authority to prohibit discharges to the system and identify measures to prevent SSOs and blockages caused by FOG;

(d) Requirements to install grease removal devices (such as traps or interceptors), design standards for the removal devices, maintenance requirements, BMP requirements, record keeping and reporting requirements;

(e) Authority to inspect grease producing facilities, enforcement authorities, and whether the Enrollee has sufficient staff to inspect and enforce the FOG ordinance;

(f) An identification of sanitary sewer system sections subject to FOG blockages and establishment of a cleaning maintenance schedule for each section; and

(g) Development and implementation of source control measures for all sources of FOG discharged to the sanitary sewer system for each section identified in (f) above.

A FOG control program is not necessary at SLAC. Two locations, the SLAC Café in Building 053 and the transportation area steam cleaning pad at Building 81, have been identified as having the potential to contribute FOG to the sanitary sewer system. The SLAC Café is connected to a grease interceptor located within the building which is serviced on a quarterly basis and emptied. WBSD also performs quarterly inspections of the Café grease interceptor, and FOG equipment is located in the vicinity of the grease interceptor. A steam cleaning pad adjacent to Building 081 is used to clean vehicles. The runoff from this system is collected and routed through an oil/water separator before discharge to the sanitary sewer. FOG has never been detected in significant quantities at the SLAC discharge to the WBSD system.
10 System Evaluation and Capacity Assurance Plan

**SWRCB Requirement (Order 2006-0003-DWQ D.13.viii):**

The Enrollee shall prepare and implement a capital improvement plan (CIP) that will provide hydraulic capacity of key sanitary sewer system elements for dry weather peak flow conditions, as well as the appropriate design storm or wet weather event. At a minimum, the plan must include:

(a) **Evaluation:** Actions needed to evaluate those portions of the sanitary sewer system that are experiencing or contributing to an SSO discharge caused by hydraulic deficiency. The evaluation must provide estimates of peak flows (including flows from SSOs that escape from the system) associated with conditions similar to those causing overflow events, estimates of the capacity of key system components, hydraulic deficiencies (including components of the system with limiting capacity) and the major sources that contribute to the peak flows associated with overflow events;

(b) **Design Criteria:** Where design criteria do not exist or are deficient, undertake the evaluation identified in (a) above to establish appropriate design criteria; and

(c) **Capacity Enhancement Measures:** The steps needed to establish a short- and long-term CIP to address identified hydraulic deficiencies, including prioritization, alternatives analysis, and schedules. The CIP may include increases in pipe size, I/I reduction programs, increases and redundancy in pumping capacity, and storage facilities. The CIP shall include an implementation schedule and shall identify sources of funding.

(d) **Schedule:** The Enrollee shall develop a schedule of completion dates for all portions of the capital improvement program developed in (a)-(c) above. This schedule shall be reviewed and updated consistent with the SSMP review and update requirements as described in Section D. 14.

No portions of the SLAC sanitary sewer system currently experience or contribute to SSO discharges caused by hydraulic deficiency. A 2010 Sanitary Sewer Assessment did not identify any sewer segments with hydraulic deficiencies. SLAC monitors the wastewater flow at connections to the WBSD lines to ensure these flows are within the allotment granted to SLAC. SLAC will utilize capacity enhancement measures to address any hydraulic deficiencies discovered in the future.

When new construction or uses are planned, the downstream hydraulic capacity of the sewer system is evaluated. If hydraulic deficiencies are predicted, SLAC will design and implement capacity enhancement measures.
11 Monitoring, Measurement and Program Modifications

**SWRCB Requirement (Order 2006-0003-DWQ D.13.ix):**

(a) Maintain relevant information that can be used to establish and prioritize appropriate SSMP activities;

(b) Monitor the implementation and, where appropriate, measure the effectiveness of each element of the SSMP;

(c) Assess the success of the preventative maintenance program;

(d) Update program elements, as appropriate, based on monitoring or performance evaluations; and

(e) Identify and illustrate SSO trends, including: frequency, location, and volume.

SLAC evaluates the performance of its SSMP annually as part of a facility-wide spill review. The Spills Program Manager reviews the following SSO information:

- Total number of SSOs;
- Cause of SSO (roots, grease debris, pipe failure, capacity, pump station failures, and other);
- Volume of spilled sewage discharged to surface water; and
- Portion of sewage contained and recovered.

A causal analysis is performed on each SSO to determine the root cause. These causes are categorized as human error, equipment failure, engineering, or maintenance. A sample of this spill summary sheet is included in Appendix B. These data are compared to the previous two years of SSO data to identify trends.

SLAC may also use other performance measures in its evaluation. SLAC will prioritize its actions and initiate changes to this SSMP based on the results of the evaluation.

SLAC will update critical information, such as contact numbers and the SSO response chain of communication, as needed. A comprehensive SSMP update will occur every 5 years, as required by the SWRCB. The next comprehensive SSMP update will occur in April 2024.
12 SSMP Program Audits

**SWRCB Requirement (Order 2006-0003-DWQ D.13.x):**

The Enrollee shall conduct periodic internal audits, appropriate to the size of the system and the number of SSOs. At a minimum, these audits must occur every two years and a report must be prepared and kept on file. This audit shall focus on evaluating the effectiveness of the SSMP and the Enrollee’s compliance with the SSMP requirements including identification of any deficiencies in the SSMP and steps to correct them.

SLAC will conduct internal audits every two years to evaluate the effectiveness of the SSMP and the compliance with the SSMP requirements. The audit focuses on evaluating the effectiveness of the SSMP and the enrollee’s compliance with the SSMP requirements identified in Provision D.13, including identification of any deficiencies in the SSMP, and steps to correct them. The audit team will consist of at least one member each from the F&O Division and Environmental Protection Department. The audit will cover each of the major sections of the SSMP. The results of the audit, including the identification of any deficiencies and the steps taken to correct the deficiencies, will be summarized in an Audit Report which will be kept on file.
13 Communications Program

**SWRCB Requirement (Order 2006-0003-DWQ D.13.xi):**

The Enrollee shall communicate on a regular basis with the public on the development, implementation, and performance of its SSMP. The communication system shall provide the public the opportunity to provide input to the Enrollee as the program is developed and implemented.

The SLAC sanitary sewer system only services the SLAC facility. Its users are limited to SLAC personnel, SLAC users, and guests. Ensuring that SLAC personnel are aware of issues pertinent to sewage waste disposal and regulatory compliance requirements is essential to the successful implementation of the SSMP. Specific procedures that aid open communication between the F&O Division, ES&H Division, and other SLAC personnel include:

- **SLAC Today** - A daily email and website posting to all SLAC personnel is used to communicate messages applicable to the entire facility.

- **ES&H Manual** - The ES&H manual contains chapters on spill response and the industrial wastewater program. All SLAC personnel have access to the manual.

- **ES&H Website** - Documents and information regarding the sanitary sewer management program including the SSMP and the Annual Site Environmental Report are posted on the ES&H website. The ES&H website is accessible by SLAC personnel as well as the general public.

- **Facilities Service Requests** - Any SLAC employee may submit a service request to F&O through the F&O website. These service requests include sanitary sewer issues.

- **Building Managers** - Each building at SLAC has a building manager who is the main point of contact for all utility issues at the building including the sanitary sewer. Facilities and ES&H staff can communicate information regarding the management of the sanitary sewer through the building manager.
Appendix A: SSO Reporting Requirements
Sanitary Sewer Overflow (SSO) Reporting Requirements

Did SSO enter channel or surface water (or unable to recover from drain system)?

- No
  - Greater than 1000 gallons?
    - No
      - Category 3 SSO
    - Yes
      - Category 2 SSO
- Yes
  - Category 1 SSO

Category 1 SSO

- Greater than 1000 gallons?
  - No
    - Within 2 hours, notify CalEEM (800) 852-7350
  - Yes
    - Greater than 50,000 gallons?
      - No
        - Water quality sampling is required
          within 48 hours
          Submit technical report
          via CIWQS within 45 calendar days
          of the SSO end date.
      - Yes
        - Draft report required via
          CIWQS within 3 business days.
          Certified report required
          via CIWQS within 15 calendar days
          of the SSO end date.

Category 2 SSO

Category 3 SSO

Certified report required via CIWQS within
30 calendar days of end of calendar month
in which SSO occurs.
Appendix B: Spill Summary Sheet
## Sanitary Sewer Overflow Summary 2014-2019

### SLAC National Accelerator Laboratory

<table>
<thead>
<tr>
<th>Date of Spill</th>
<th>Date of Week</th>
<th>Time of Day</th>
<th>Volume (gal)</th>
<th>Area of Spill</th>
<th>Cause of Spill</th>
<th>Corrective Actions Taken to Control or Contain Material</th>
<th>Category Type</th>
<th>Causal Analysis Factors</th>
<th>Caused by</th>
<th>Spill in Contact With</th>
</tr>
</thead>
<tbody>
<tr>
<td>2/25/2014</td>
<td>Tues</td>
<td>1:15 PM</td>
<td>10</td>
<td>B620</td>
<td>Broken Pipe</td>
<td>Stopped Pump and Repaired</td>
<td>3</td>
<td>Equipment/Material</td>
<td>SLAC</td>
<td>Soil</td>
</tr>
<tr>
<td>10/29/2014</td>
<td>Wed</td>
<td>10:29 AM</td>
<td>50</td>
<td>IR-12</td>
<td>Corroded Pipe</td>
<td>Pumped Out</td>
<td>3</td>
<td>Equipment/Material</td>
<td>SLAC</td>
<td>Asphalt</td>
</tr>
<tr>
<td>8/28/2015</td>
<td>Fri</td>
<td>3:00 PM</td>
<td>1</td>
<td>B033</td>
<td>Blocked Pipe</td>
<td>Cleared Pipe</td>
<td>3</td>
<td>Equipment/Material</td>
<td>SLAC</td>
<td>Soil</td>
</tr>
<tr>
<td>1/7/2017</td>
<td>Sat</td>
<td>9:00 PM</td>
<td>30</td>
<td>Sector 10</td>
<td>PortaPotty Blew Over</td>
<td>Uprightened PortaPotty</td>
<td>1</td>
<td>Other, Weather</td>
<td>Subcontractor</td>
<td>Catch Basin</td>
</tr>
<tr>
<td>1/8/2017</td>
<td>Sun</td>
<td>12:20 PM</td>
<td>50</td>
<td>B950</td>
<td>PortaPotty Blew Over</td>
<td>Uprightened PortaPotty</td>
<td>1</td>
<td>Other, Weather</td>
<td>Subcontractor</td>
<td>Catch Basin</td>
</tr>
<tr>
<td>3/27/2017</td>
<td>Mon</td>
<td>1:25 PM</td>
<td>1</td>
<td>B015</td>
<td>Failed Switch</td>
<td>Repaired</td>
<td>3</td>
<td>Equipment/Material</td>
<td>SLAC</td>
<td>Asphalt</td>
</tr>
<tr>
<td>10/23/2017</td>
<td>Mon</td>
<td>12:35 PM</td>
<td>10</td>
<td>B137 Lift Station</td>
<td>Clogged with Roots</td>
<td>Cleaned Up</td>
<td>3</td>
<td>Equipment/Material</td>
<td>SLAC</td>
<td>Asphalt</td>
</tr>
<tr>
<td>2/6/2019</td>
<td>Wed</td>
<td>9:00 AM</td>
<td>10</td>
<td>B102</td>
<td>Blocked Pipe</td>
<td>Cleaned Up</td>
<td>3</td>
<td>Equipment/Material</td>
<td>SLAC</td>
<td>Asphalt</td>
</tr>
</tbody>
</table>